Rock Island Arsenal
Shop G
(Building 108)
Rodman Avenue between Third Street
and Fourth Street
Rock Island
Rock Island County
Illinois

HAER No. IL-20-I

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, D.C. 20013-7127

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HISTORIC AMERICAN ENGINEERING RECORD

ROCK ISLAND ARSENAL
SHOP G
(Building 108)
HAER No. IL-20I

Location:	Rodman Avenue Between Third Street and Fouth Street, Rock Island Arsenal, Rock Island, Rock Island County, Illinois UTM: 15.705030.4598890 Quad: Davenport East
Date of Construction:	1876-1882
Present Owner and Occupant:	U.S. Army
Present Use:	Administrative offices, printing shop
Significance:	After taking command of Rock Island Arsenal in 1865, General Thomas Jefferson Rodman devised a master plan for the installation calling for the construction of ten large, Greek Revival, manufacturing shops, five on each side of the island's major east-west thoroughfare. Under construction from 1876 to 1882, Shop G was the seventh to be completed. With its companion facilities completed under the Rodman plan, Shop G forms a cohesive architectural statement, which, in terms of both scale and style, has no counterpart among government installations in the Midwest. In addition to their architectural importance, the Rodman shop buildings are the administrative and technological core of Rock Island Arsenal, one of only two "old-line," nineteenth-century arseanls still in operation for munitions production. The buildings are vital for understanding the history of American ordnance development and manufacture from the Spanish American War to the present. Shop G is part of the Rock Island Arsenal National Register Historic District.
Historian:	Jeffrey A. Hess, February 1985
Architectural Historian:	David Arbogast, February 1985

PART I. HISTORICAL INFORMATION

A. Physical History:

1. Date of erection: According to Colonel Daniel Webster Flagler, who succeeded General Thomas Jefferson Rodman as the arsenal's commandant in 1871, the building site was selected by Rodman in February 1866 (Flagler, p. 118). Excavation commenced in 1876, and the foundations were completed in the fall of 1877 (Flagler, p. 270; "Report, 1878," p. 67). By June 1880, the stonework for the walls was completed, and the building was finished in 1886 ("Report, 1880," p. 251; "Report, 1882," p. 78). A datestone above the central entrance of the north facade bears the inscription, "1877."

2. Architect: Although Shop G was designed and built under the supervision of Colonel Daniel Webster Flagler, the building was closely patterned after Shops A and C, which were designed by General Thomas Jefferson Rodman (Flagler, p. 261).

Born in Salem, Indiana in 1815, Rodman graduated from West Point in 1841 and was assigned to Allegheny Arsenal in Pittsburgh as an officer of the Ordnance Department. During the next two decades, he developed techniques for hollow casting cannon and for producing perforated propellant, which revolutionized the manufacture and use of artillery (Zabecki, pp. 55-56; Flagler, pp. 262-266).

As commandant of Watertown Arsenal near Boston from 1859 to 1865, Rodman was responsible for designing a machine shop for the installation, which was a simplified, brick version of the Greek Revival stone manufacturing shops he subsequently planned for Rock Island Arsenal (Baylies and Bahr, p. 37). Rodman assumed command of Rock Island Arsenal in 1865; he died of illness at the installation in June 1871 (Flagler, pp. 116, 261).

3. Original and subsequent owners: U.S. Army.

4. Builder, contractor, suppliers:

"Much of the manufacturing effort at the arsenal before the Spanish-American War concentrated on construction of the buildings. The rolling mill [in Shop F (see HAER No. IL-20C)] produced most of the roof trusses. . . . The foundry [in Shop E (see HAER No. IL-20H)] and machine shop [in Shop C (see HAER No. IL-20G)] made much of the machinery and building hardware such as the locks and stairways. The carpenter shop [in Shop C] made the

window frames. Contract labor did some of the work while civilian employees and soldiers did other portions of the job" (Bouilly, p. 125; see also "Report, 1880," p. 251; "Report, 1882," p. 79).

5. Original plans and construction: On February 7, 1866, Rodman submitted to the War Department a schematic site plan of the arsenal, proposing the construction of ten manufacturing shops, five on each side of the arsenal's main east-west thoroughfare (later named Rodman Avenue). The plan was published in 1877 (Flagler, Plate I). It delineates the ten buildings, including Shop G, as U-shaped structures with a crossbar connecting the legs of the "U" at midpoint. According to Flagler, the configuration of the buildings was almost immediately changed. "To add strength to the walls [and] beauty to the architecture," two porticos were added to the front and to each of the sides of the buildings. Also, the crossbar between the legs of the "U" was removed "to leave the courtyard clear for teaming purposes" (Flagler, p. 123). The revised plan was published in 1877 (Flagler, Figure 1, inset on Plate I). The Rock Island Arsenal Engineering Plans and Services Division has a microfiche copy of an undated floor plan for Shop G, signed by "D. W. Flagler," that is identical to the schematic plan published in 1877. No other original plans or elevations have been located.

   According to Flagler, Shop G was identical to earlier shops (i.e, Shops A and C; see HAER Nos. IL-20A, 1L-20G) with the following exceptions:

   > "Shop [G] is built of the Grafton limestone from the quarries at Grafton, Ill., on the Mississippi River, just below the mouth of the Illinois River; and [sandstone from] the Ste. Genevieve quarries, in Missouri, about 140 miles south of St. Louis. The sandstone was used only for the entablature, water table, caps, and sills. Both of these stones are believed to be of better quality and more durable than the stone in the other shops, and the walls are somewhat handsomer" ("Report, 1882," p. 78).
   >
   > "It is found that some of the limestone steps and platforms of the other shops have been injured by the action of the atmosphere, water, and frost in this severe climate, and by wear. On this account I have built the shops and platforms of this shop of granite. They add much to the appearance of the building, and are practically imperishable. The only objection to its use is the cost. The first cost of the stone is about double that of dimension limestone, and the

cost of cutting about five times that of limestone" ("Report, 1882," p. 79).

"In the roofs of the other shops small skylights have been inserted at various places for improving the light of the third story. These are found to give insufficient and bad light for shop purposes. . . . I have left the scattered skylights out of shop G, and put a continuous skylight 5 feet wide around the whole building on one side of the peak. It furnished an excellent light, improves very much the general appearance of the interior, and gives such ventilation as to make the temperature about the same as in the other stories in hot weather" ("Report, 1881", p. 58).

The earliest known view is a 1944 photograph in the picture collection of the Rock Island Arsenal Historical Office (see HAER Photo No. IL-20I-4). It confirms Flagler's general description of original construction and the details of the 1877 plan. The building's present configuration conforms to the 1877 plan, except that a three-story, stone-veneer building of identical Greek Revival architecture now connects the pavilions on Shop G's east facade to Shop I.

6. Alterations and additions: At undetermined dates, the original slate roofing was removed; metal roofing was installed; and the original granite entrance steps were replaced with concrete steps.

In 1917-1918, the facades of the pavilions on the building's east elevation were demolished. The original stonework from the demolished sections was reused in constructing a three-story, stone-veneered, Greek Revival structure connecting the remaining portions of the pavilions to Shop 1. The new building, designated as "G-I Connection," was designed and built by Stone and Webster Company of Boston; it was completed in June 1918 (Completion Report,, p. 3; see HAER No. IL-20T).

In 1983, the fenestration on the first and second floors was altered by replacing the six-over-six and four-over-four, double-hung, wooden sash with one-over-one, doube-hung, anodized aluminum sash containing divisions strips on the glass to simulate the original pane configuration. The Rock Island Arsenal Historical Office has a 1983 photograph documenting this alteration. It is captioned on the back, "Building 108 April 1983 / Installation of New Windows."

B. Historical Context:

After assuming command of Rock Island Arsenal in August 1865, General Thomas Jefferson Rodman devised a master construction plan for the installation, which he submitted to the War Department on February 7, 1866. In its general outline, Rodman's plan called for the construction of ten large, stone, manufacturing shops, five on each side of the arsenal's main east-west thoroughfare (later named Rodman Avenue). The establishments on the south side of the avenue were called "arsenal shops," which meant they were to be devoted to the manufacture of general ordnance items. Those on the north side were called "armory shops," because they were intended for small arms production. All ten shops were designed in a Greek Revival style, which Rodman had previously used in designing a machine shop at Watertown Arsenal near Boston. Although none of the shops was completed before Rodman died of illness in June 1871, all ten were eventually finished by his nineteenth-century successors (Flagler, p. 118; Nothstein and Stephens, pp. 153-157).

Situated on the eastern half of "arsenal row," Shop G was the seventh shop to be completed. Excavation began in 1876, and construction concluded in 1882. The building was principally used for storage until the fall of 1897, when "the basement and first floor of the west wing . . . were prepared for use as a machine shop and erecting shop for field artillery material, and machines were purchased and installed there during that winter" ("History of Rock Island Arsenal," p. 17). In 1900, when all machine shop operations previously located in Shop C (see HAER No. IL-20G) were transferred to Shop G, the building became "the principal artillery vehicle manufacturing shop of the Rock Island Arsenal" ("History Artillery Vehicle Department," vol. 3, n.p.). The following description of the building's manufacturing program was published in 1905:

> "Occupying the whole of building G, [the machine shop] is utilized in the making of the carriage, limber and caisson for the new 3-inch field gun. On the first floor a large part of both wings is required in making the axles, recoil cylinders and other finished parts of the carriage and its equipment, and nearly the whole of the basement is occupied by the carriage assembling department [see HAER Photo No. IL-20I-5]. . . . The first floor . . . is well equipped with lathes, drills, screw machines, etc. [see HAER Photo No. IL-20I-6]. . . . [On] the second floor in the west wing . . . ammunition chests for limbers and caissons for the field gun are assembled and made ready to put in place . . . . The second floor of the east wing is occupied by toolmaking and milling departments; and at the front

of the building is located the main drawing office, where about twenty-five draftsmen are kept busy. . . . The top floor, or attic, serves as a pattern loft, where are stored an immense number of metal and wood patterns. Of course the machine shop does repairing for the plant; then, too, there are new appliances and special tools to build, and also quite a little work in connection with the heavier ordnance, such as 5-inch and 6-inch barbette carriages, etc. In all, about 650 men are at present employed. As is the case with all the other departments at the arsenal, the machine shop is electrically driven -- each line shaft having its own motor, and most of the motors being attached to the ceiling" (Stanley, pp. 175-176).

Shop G remained the arsenal's main artillery vehicle plant until the completion of the Field and Siege Building (see HAER No. IL-20AA) in 1918. In 1921, the Shop G was designated a "reserve facility" and re-equipped for "general purpose machining, with emphasis on turning, boring, milling, drilling, and assembling operations" (Wickstrom, p. 44). Inactive for the next two decades, Shop G reopened in 1940 with individualized motorized equipment to manufacture artillery recoil mechanisms, continuing in that capacity until the end of World War II. The equipment, which was located on the basement, first-story, and second-story levels, included planers, milling machines, boring and turning lathes, turret lathes, and honing and lapping machines ("History of Artillery Vehicle Department," vol. 3, n.p.; vol. 6, p. 2). In 1951, the building was refurbished as a "modern machine shop" to produce Navy missile components and gun mounts (Rock Island Argus). After the Korean War, it was converted into administrative offices and a print shop (for additional documentation, see HAER No. IL-20).

Prepared by: Jeffrey A. Hess
MacDonald and Mack Partnership
February 1985

PART II. ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural character: The building is a massive, late Greek Revival style, U-plan, limestone with sandstone trim structure. It is two-and-one-half stories above a basement, with a gabled roof sheltering an attic. It forms part of a symmetrical set of five buildings along the south side of Rodman Avenue, which is mirrored by a matching set on the north side.

2. Condition of fabric: The building is well-maintained and is in good condition.

B. Description of Exterior:

1. Overall dimensions: The main (north) block of the building (HAER Photo No. IL-20I-1) messures 210' x 60' (19 bays on the north elevation and 9 bays on the south elevation). Two wings (HAER Photo No. IL-20I-2), each measuring 240' (28 bays on their exterior elevations and 21 bays on their courtyard elevations) x 60' (5 bays on their south elevations) stretch south from the east and west ends of the main block. Near each end of the outer, long elevations of the wings are projecting pavilions measuring 60' (5 bays) and extending 15' (1 bay) from the wing elevations. There is a very small square addition at the north end of the west elevation housing the steam tunnel. The building is two-and-one-half stories tall with a full basement and attic.

2. Foundations: Coursed, rock-faced ashlar limestone measuring 3'-0" thick below a dressed ashlar sandstone water table. The small addition foundation is poured concrete.

3. Walls: Coursed, rock-faced ashlar limestone (HAER Photo Nos. IL-20I-1 and IL-20I-2) decreasing in thickness by 6" with each story. Colossal rock-faced asblar limestone pilasters (HAER Photo Nos. IL-20I-1 and IL-20I-2) with sandstone capitala rising from the water table to the entablature divide the elevations into a regular bay system. The dressed sandstone entablature (HAER Photo Nos. IL-20I-1 and IL-20I-2) carries a projecting dressed sandstone Classical cornice. The pedimented gable ends (HAER Photo Nos. IL-20I-1 and IL-20I-2) are rock-faced ashlar limestone with dressed sandstone cornices. There is a carved sandstone block above the central entrance of the front (north) elevation bearing the date 1877. The addition walls are tan brick.

4. Structural systems: Limestone bearing wall. Coursed, rock-faced limestone piers (HAER Photo No. IL-20I-3) 20' on-center in the basement support fluted, Doric, cast-iron columns on the first and second floors. First, second, and attic floor systems are wrought-iron stringers and joists with brick vaulting between. The roof system is iron Fink trusses. The addition has brick bearing walls.

5. Porches: Porches (HAER Photo Nos. IL-20I-1 and IL-20I-2) are located at the center bays of the pavilions (except abutting Building 109), the south ends of the wings, the third bays from each end of the north elevation of the main block, the center of the main block, and the south end of the west elevation of the west wing. Typical porches consist of poured concrete steps on rock-faced ashlar limestone base walls. Tbe northwest pavilion porch contains a rock-faced limestone false semi-circular archway in its west face with voussoirs, keystone, jambs, and sill block. The

arch has rock-faced ashlar limestone infill. The southwest pavilion porch (HAER IL-20I-2) has a similar arch in its west face extending to grade level. Apparently once a doorway, it is now filled with brick.

6. Light wells: Across the south elevation (HAER Photo No. IL-20I-1) there is a narrow window well with rock-faced ashlar limestone walls to grade and a black steel pipe railing above grade.

7. Openings:

   a. Doorways: Principal doorways (HAER Pboto Nos. IL-20I-1 and IL-20I-2) are centered in the northeast, aouthwest, and southeast pavilions, the wing ends, the third bays from each end of the north elevation, and the first and sixteenth bays from tbe north end of the courtyard elevations of the wings. Those of the wing ends and courtyard are at the basement level. Each has a rock-faced limestone segmental-arched head with a rock-faced keystone, and rock-faced limestone jambs with large semi-circular base blocks (now removed from most first-floor doorways) projecting into the doorway. Most of the original sandstone sill blocks have been replaced with poured concrete sills. The north elevation and west pavilion doorways contain modern glass doors with transoms and sidelights in black anodized aluminum framing. The southeast pavilion contains modern glass and aluminum frame infill, below which, at the basement level is a doorway opening containing a pair of modern slsb doors with small, nsrrow windows in the upper corner of each leaf. The wing end doorways contain modern overhead doors, as does the north doorway of the east courtyard elevation. Tbe south doorway of the same elevation has been filled with brick. The two western principal courtyard doorways contain original pairs of wood doors filling the arches with each leaf having four-light sash above two panels. Narrower doorways are located in the center of the north and soutb (basement level) elevations of the main block. The north opening is identical to those of the principal doorways, differing only in width and containing a pair of modern glass doors and transom in aluminum framing similar to the other principal doors. Tbe south doorway has been obliterated by Building 112. In the fifth and seventh bays from the north of the courtyard wing elevations at the basement level are doorways matching the width of standard window openings. They bave ashlar limestone jambs, lintels formed by the water table, and limestone sill blocks, similar to the adjacent window openings, differing only in length. The two west doorways contain original four-light over two psnel wood doors, but the two east doorways have been filled with brick. East of the south end doorway of the east wing is a former window opening leng-

thened to accommodate a modern slab door with two lights in an upper panel. West of the south end doorway of the west wing is another former window opening also lengthened to contain a modern slab door with upper glass panel. At the south end of the west wing is a former window opening converted to contain a wood, five-panel door. In the south elevation of the addition is a brick opening containing a modern slab door.

b. Windows: Typical first- and second-floor window openings (HAER Photo Nos. IL-20I-1 and IL-20I-2) contain modern, one-over-one, double-hung, dark brown, anodized aluminum sash with division strips on the glass to simulate the appearance of six-over-six, double-hung, wood saah and exterior combination screen and storm sash. The openinga have rock-faced limestone jambs, cut sandstone sills snd flat limestone lintels. Paired window openings (HAER Photo Nos. IL-20I-1 and IL-20I-2) above the principal doorways have segmental-arched, rock-faced limestone voussoirs and keystones. Above the narrow, center doorways on the south and north main block elevations are similar window openings (HAER Photo No. IL-20I-1) containing pairs of simulated four-over-four, double-hung, aluminum sash also with exterior combination sash. Attic window openings (HAER Photo Nos. IL-20I-1 and IL-20I-2) contain small, single-light, pivoting, wood sash snd some one-over-one, double-hung, wood sash, and are typically arranged in pairs of small openings in the building entablature with sets of four centered in the gable ends and sets of three in tbe centers of the south and north main block elevations. These window openings have rock-faced sandstone jambs and aills and lintels formed by the entablature and frieze. The gable ends contain paired window openings (HAER Photo Nos. IL-20I-1 and IL-20I-2) with rock-faced limestone jambs, rock-faced limestone segmental arches and keystones and dressed sandstone sills. The basement window openings (HAER Photo Nos. IL-20I-1 and IL-20I-2) are filled with glaas block over two-light aluminum hopper sash in rock-faced limestone jambs, lintels formed by the water table, and flat, dressed sandstone sill blocks. In the north elevation of the addition is a simple brick opening containing a two-over-two, double-hung, wood sash. All surviving wood sash are painted wbite.

c. Other openings: In the north end of the east elevation at the basement level is a semi-circular rock-faced ashlar limestone opening with voussoirs, keystone, jambs, and sandstone sill block through which passes the concrete steamtunnel.

8. Roof:

a. Shape, covering: The roof (HAER Photo Nos. IL-20I-1 and IL-

20I-2) is a cross-gable form covered with standing seam metal roofing.

b. Cornice, eaves: The cornice and eaves (HAER Photo Nos. IL-20I-1 and IL-20I-2) are Classical, molded, dressed sandstone. The interior metal gutter aystem is tied to exterior metal leaders which lead to an underground drainage system.

9. Ancillary buildings: In the courtyard Building 112, the Mobile Operations Prototype Building, is currently under construction. It is a large, one-room, steel frame structure with a low gable roof. The roof and walls are sheatbed with modern sheet metal siding. There is s large doorway containing an overhead door centered in the south elevation, flanked by a pedestrian doorway. Centered in the bays of the east and west elevations sre sets of fixed, eight-light, steel, window sash with a four-light, hopper sash in each center section.

C. Description of Interior:

1. Floor plana: Because of the original shop functions of the building the interior had an open plan without significant interior partitions. Alterations aince construction hsve installed partitions to meet functional needs. Most interior partitions date from the past decade. There is one freight elevator at the intersection of the wing with the main block. Modern restrooms are typically located in the paviliona of the basement, first, and second floors.

a. Basement: The basement is an open-plan printing shop with some enclosed rooms. At the north end of the west elevation is a small addition sheltering the steam tunnel, which enters the building at thst point.

b. First floor: The first floor is primarily a central-hall plan with one wing retsining sn open-plan office layout.

c. Second floor: Approximately balf of the second floor is used as sn open plan printing shop and the other half is a central-hall plan with partitioned offices.

d. Attic: The attic is an open-plan storage area.

2. Stairways: There are four, U-plan stairways with intermediate landings rising from the basement to the attic. These are located in each of the pavilions. Originally open, they are now enclosed. They are cast iron in curvilinear Italianate style forms with open risers and open, decorative railing supporta and no newel poats. The landings are covered with concrete. The handrails are modern

molded oak with a clear varnish and are each raised on a flat steel plate painted black. The steel plate enables the rail to meet height requirements for safety. The bottom flights of stairs in the basement are limestone blocks.

3. Flooring: Basement flooring (HAER Photo No. IL-20I-3) is poured concrete with a sealer applied to it. The first floor has poured concrete flooring covered with linoleum tile. The second floor has concrete flooring covered with linoleum tile in the office portion and concrete flooring with a sealer applied to it in the printing portion. The attic has wood flooring with a clear varnish finish. Along the center of the attic floor is a set of steel plates forming a track.

4. Wall and ceiling finishes: Outer basement walls and interior piers (HAER Photo No. IL-20I-3) are painted, rock-faced, ashlar limestone. Interior partition walls are painted brick, painted concrete block, painted gypsum board, and wire cage. The ceiling (HAER Photo No. IL-20I-3) is exposed and painted iron joists and stringers and brick vaulting.

   Outer first- and second-floor walls are painted rock-faced limestone. The cast-iron columns are exposed and painted. Partition walls include painted brick, painted gypsum board, and demountable partitions. The first-floor ceiling is auspended acoustical tile and the second-floor ceiling is painted iron stringers and joists with brick vaulting.

   The outer attic walls are unpainted, rock-faced, ashlar limestone. Partitions are unpainted brick; painted gypsum board; vertical, beaded, tongue-and-groove board; open, vertical wood slats, and wire cage. The ceiling is the wood decking and rafters and purlins of the roof.

5. Openings:

   a. Doorways and doors: No original doorways survive. Thus, all doorways are of relatively recent vintage appropriate to their respective partitiona.

   b. Windows: Window openings (HAER Photo No. IL-20I-3) are formed by the adjacent limestone jambs and lintela and sandstone sills.

6. Hardware: Original hardware survives on the original doors noted above and includes heavy, cast-brass, plate hingesand door pulls incorporating "RIA" in their faces.

7. Mechanical equipment:

a. Heating, air conditioning, ventilation: The building is heated by steam radiators from a central heating plant (Building 227). There is no air conditioning. Ventilation is provided by opening the window sash.

b. Lighting: Artificial illumination is by means of incandescent electrical fixtures in the attic and fluorescent fixtures in the basement, first, and second floors. No evidence remains of original artificial lighting systems.

c. Plumbing: No original plumbing fixtures survive.

d. Elevators: Of the original two freight elevators, only one survives, and that in a modernized form.

e. Machinery: No original machinery survives. A variety of printing presses and support machinery in the building serves to meet the publishing needs of those served by the arsenal.

D. Site:

1. General setting and orientation: The building is set on the southwest corner of Rodman Avenue, the arsenal's principal street and Third Street. East of the building is Building 110, an administration building. Connecting the two buildings is Building 109, another administration building. In the paved courtyard Building 112, a mobile operations prototype building, is being constructed. South of the building runs South Avenue. The relatively level site slopes gently to the south.

Prepared by: David Arbogast
Architectural Conservator
February 1985

PART III. SOURCES OF INFORMATION

A. Original Architectural Drawings:

The Rock Island Arsenal Engineering Plans and Services Division has a microfiche copy of an undated floor plan, signed by "D. W. Flagler" (microfiche No. 20000524). It shows the building's original configuration.

B. Early Views:

The earliest known view of the building is a 1944 photograph in the picture collection of the Rock Island Arsenal Historical Office. It is captioned in part, "75 / Looking S.E. at front of Shop 'G,' Bldg. No. 108 / 21 November 1944" (see HAER Photo No. IL-20I-4). The same collection also has two photographs, dated 1904, of machine shop and assembling operations. They are captioned: "901-632 May 12, 1904 / Shop G, Building #108. First floor, east wing. Machining Department" (see HAER Photo No. IL-20I-6); "901-636 May 12, 1904 / Shop G Building #108. Basement, / east wing. Assembling Department" (see HAER PHoto No. IL-20I-5).

C. Bibliography:

1. Primary and unpublished sources:

Baylies, Libby and Bahr, Betsy. "Historic American Buildings Survey of the United States Materials and Mechanics Research Center, Watertown, Massachusetts." 1982. HAER No. MA-20, HABS/HAER Collection, Prints and Photographs Division, Library of Congress. Discusses Rodman's architectural work at Watertown Arsenal.

Hess, Jeffrey A., and Mack, Robert C. "Historic Properties Report Rock Island Arsenal, Rock Island, Illinois". Prepared by MacDonald and Mack Partnership, and Building Technology Incorporated for the Historic American Buildings Survey/Historic American Engineering Record, National Park Service, U.S. Department of the Interior, 1985. The report, with accompanying inventory cards, is filed as field records in the Prints and Photographs Division, Library of Congress, under HAER No. IL-20.

"History Artillery Vehicle Department, 1939-1942," vol. 3. Rock Island Arsenal Historical Office. Briefly describes building's manufacturing program.

"History Manufacturing Department Rock Island Arsenal, 1946-1947," vol. 6. Rock Island Arsenal Historical Office. Notes closure of shop after World War II.

"History of Rock Island Arsenal Called for by O.O. 25301-D-195," N.d. Rock Island Arsenal Historical Office. Notes role of arsenal shops in manufacturing building materials for Shop D.

Real Property Cards, Engineering Plans and Services Division, Rock Island Arsenal. Briefly describes building's structural

characteristics and provides sketchy history of maintenance operations.

Wickstrom, George. "History of Rock Island Arsenal, Section 1, 1919-1939." Rock Island Arsenal Historical Office. Briefly discusses re-outfitting of shop after World War I.

2. Secondary and published sources:

Bouilly, Robert. "Arsenal Island." Joined by a River: Quad Gities, ed. Frederick I. Anderson. N. pl.: Lee Enterprises, Incorporated, 1982. Excellent historical analysis of the arsenal's development to about 1910, written by a historian in the Rock Island Arsenal Historical Office.

Completion Report Covering All Gonstruction Projects Accomplished Under Supervision of the Construction Division, U.S. Army at Rock Island Arsenal. Rock Island Arsenal, 1919. Rock Island Arsenal Historical Office. Discusses planning and construction of connecting building between Shops G and I.

Flagler, D[aniel] W[ebster]. A History of the Rock Island Arsenal from Its Establishment in 1863 to December 1876. Washington, D.G.: Government Printing Office, 1877. Most detailed discussion of general site planning for arsenal's shops; provides beginning date of construction on Shop G.

Nothstein, Ira O. and Stephens, Glifford W. A History of Rock Island Arsenal from Earliest Times to 1954. Rock Island: U.S. Army, Rock Island Arsenal, 1965. 3 vols. Rock Island Arsenal. The best account of the arsenal's general operations, with specific references to Shop G's manufacturing functions.

"Report of the Ghief of Ordnance, 1878, 1880, 1881, 1882." House Documents, vols. 1847, 1956, 2014, 2095. Washington, D.G.: Government Printing Office, 1878, 1880, 1881, 1882. Progress reports on construction.

Rock Island Argus. December 29, 1951, IV, 1:1. Typed transcript of article in Rock Island Arsenal Historical Office. Notes rehabilitation of Shop G into "modern machine shop" for missile component work. Stanley, F. A. "The United States Arsenal at Rock Island, -- II." American Machinist (February 9, 1905), 175-178. Detailed discussion of machine shop operation in Shop G.

Stanley, F.A. "The United States Arsenal at Rock Island -- II." American Machinist (February 9, 1905), 175-177. Excellent illustrated discussion of the artillery vehicle production operation.

Zabecki, David T. "Father of the Rock Island Arsenal." Fieldf Artillery Journal, 49 (January / February, 1951), 55-56. Discusses Rodman's pioneering work in cannon and propellant design.

D. Likely Sources Not Yet Investigated:

Record Group 156 at the National Archives contains correspondence on the construction and operation of Rock Island Arsenal from 1871 to 1903. This material is also available on 216 reels of microfilm at the Browning Museum, Rock Island Arsenal.

PART IV. PROJECT INFORMATION

This project was part of a program initiated through a memorandum of agreement between the National Park Service and the U.S. Department of the Army. Stanley J. Fried, Chief, Real Estate Branch of Heaquarters DARCOM, and Dr. Robert J. Kapsch, Chief of the Historic American Buildings Survey/Historic American Engineering Record, were program directors. Sally Kress Tompkins of HABS/HAER was program manager, and Robie S. Lange of HABS/HAER was project manager. Building Technology Incorporated, Silver Spring, Maryland, under the direction of William A. Brenner, acted as primary contractor, and MacDonald and Mack Partnership, Minneapolis, was a major subcontractor. The project included a survey of historic properties at Rock Island Arsenal, as well as preparation of an historic properties report and HABS/HAER documentation for 38 buildings. The survey, report, and documentation were completed by Jeffrey A. Hess, historian, Minneapolis; Barbara E. Hightower, historian, Minneapolis; David Arbogast, architectural historian, Iowa City, Iowa; and Robert C. Mack, architect, Minneapolis. The photographs were taken by Robert A. Ryan, J Ceronie, and Bruce A. Harms of Dennett, Muessig, Ryan, and Associates, Ltd., Iowa City, Iowa. Drawings were produced by John Palmer Low, Minneapolis.